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EXAMINER

BUDD, MARK OSBORNE

ART UNIT

PAPER NUMBER

2834

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Please find below and/or attached an Office communication concerning this application or proceeding.



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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 09/369,090  
Filing Date: August 05, 1999  
Appellant(s): IINO ET AL.

**MAILED**

DEC 23 2004

**GROUP 2800**

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Bruce L. Adams  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 12-12-03.

**(1) Real Party in Interest**

A statement identifying the real party in interest is contained in the brief.

**(2) *Related Appeals and Interferences***

The brief does not contain a statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief. Therefore, it is presumed that there are none. The Board, however, may exercise its discretion to require an explicit statement as to the existence of any related appeals and interferences.

**(3) *Status of Claims***

The statement of the status of the claims contained in the brief is correct.

**(4) *Status of Amendments After Final***

**(5) *Summary of Invention***

The summary of invention contained in the brief is correct.

**(6) *Issues***

The appellant's statement of the issues in the brief is substantially correct. The changes are as follows: Since the examiner is withdrawing rejections based on the Vishnevsky reference, these rejections are no longer an issue.

**(7) *Grouping of Claims***

Appellant's brief includes a statement that claims 1, 2, 4, 6, 7 and 9 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

**(9) *Prior Art of Record***

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The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

5,247,220	Miyazawa et al	9-93
4,513,219	Katsuma et al	4-84

**(10) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

The following ground(s) of rejection are applicable to the appealed claims:

Please note that the Vishneusky reference is being withdrawn to reduce the issues on appeal and because it was found to be inappropriate as an anticipatory reference under 35 USC 102.

Claims 1, 7 and 9 are rejected under 35 USC 102(b) as anticipated by Katsuma or Miyazawa. Please refer to Katsuma fig. 7 (see text col. 3, ln 45-50 and col. 8, ln 3-38) and Miyazawa fig. 44 (see text col. 18 ln 54-col. 19 ln. 13). The references show claim 1.

An ultrasonic motor, comprising a movable member disposed to undergo movement in response to a drive force;

Katsuma #9 Miyazawa #2a-27 a substrate having a conductor pattern for conveying a drive signal from a drive circuit; Katgsuma #51 Miayazawa #47 a piezoelectric vibrator provided on the substrate for undergoing oscillating movement in response to the drive signal so as to contact the movable member and generate the drive force to drive the movable member; Katsuma #2, #3 Miyazawa #2-27, #3-27.

Note that piezoelectric vibrator is considered an open term not limited to only a piezoelectric element and its electrodes thus the combination of vibration member 32 and piezo elements #3 of Katsuma is considered to be fairly interpreted as a piezoelectric vibrator. Likewise for the vibrating member #2-27 and piezoelectric members #3-27 of Miyazawa and a support member provided on the substrate for mechanically fixedly supporting the piezoelectric vibrator at a point corresponding to a node of vibration of the piezoelectric vibrator on the substrate and transmitting the drive signal from the conductor pattern to electrodes of the piezoelectric vibrator so that no conductor wires extend from the substrate to connect the drive circuit and the piezoelectric vibration.

Katsuma #4 Miyazawa #46, #2e-27.

(Note Miyazawa fig. 19 and 20 shows the vibrating mode for the piezoelectric vibrator, including a series of nodes between the shaded and unshaded segments of the stator. (refer also to fig. 2, which more clearly demonstrates those transition areas as node). Since both the conductive support #2e-27 and the anisotropic conductor #46 support an entire ring or center area of the piezoelectric vibrator, this area clearly includes any nodes located in that area. Thus the mounting must support the vibrator at a point corresponding to a node". Note the claim does not state that the vibrator is supported only at a node. Regarding Katsuma, the elastic, anisotropic conductive support member #4 is covers the entire back of the piezoelectric vibrator, thus it too must support the vibrator at a point corresponding to a node". Since the stator

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produces standing waves which are combined to produce a traveling wave it is clear that nodes exist in the stator at any time it is operating.

An ultrasonic motor according to claim 1; wherein the support member is provided with at least a part of a drive circuit for producing the drive signal.

Note a part of a drive circuit is interpreted to define a conductor or conductive path. Thus, the conductors #46a in the anisotropic conductive support of Mizawa as well as the un-numbered conductors in the anisotropic conductive support #4 of Jatsyna are clearly part of a drive circuit").

An electronic appliance an ultrasonic motor according to claim 1.

Miyazawa can be used in a time piece-col. 1, line 24; Katsuma can be used in a camera-see col. 8 ln 34-38.

Claim 2 is rejected under 35 USC 102(b) as anticipated by Katsuma.

Please refer to fig. 7 of the reference.

An ultrasonic motor according to clam 1 wherein the support member has sufficient elasticity to elastically urge the piezoelectric vibrator against a moving member to drive the moving member in response to oscillating movement of the piezoelectric vibrator.

Katusuma states the absorber 4 is elastic --" (col. 8, line 4-8). Since the moving member (rotor #9) must contact the piezo vibrator stator structure to have an operable device, the member #4 must inherently have sufficient elasticity to elastically urge the piezoelectric vibrator against a moving member ---".

Claims 4 and 6 are rejected under 35 USC 103 as unpatentable over Katsuma or Miyama. The references teach the claimed structure with the exception that the support members of Katsuma (#4), and Miyazawa (#46, #2e-27) are provided as separate elements rather than as an integral part of the substrate. However, making parts integral or separable has long been held to be within the skill expected of the routineer. Thus to integrate the separate mounting piezo of Miyazawa or Katsuma as part of the substrate would have been obvious to one of ordinary skill in the art.

For example, Miyazawa shows support #2e-27 as integral with vibration member #227 in fig. 44. However, in fig. 52, the support element #53-30 is a separate element from vibration member 32-30. Clearly, the support members #2e-27 or #53-30 could just as easily be part of base substrates #4-30 or #4-27 and perform the same support function.

#### (11) Response to Argument

Applicant argues that the references do not explicitly show certain features.

Independent claim 1 requires a piezoelectric vibrator that undergoes oscillating in response to the drive signal so as to contact the movable member and generate the drive force to drive the movable member, and a support member for mechanically supporting the piezoelectric vibrator on a substrate at a point corresponding to a node of vibration of the piezoelectric vibrator and transmitting a drive signal to electrodes of the piezoelectric vibrator so that no conductor wires extend from the substrate to connect the piezoelectric vibrator to a drive circuit (Brief pg. 11).

Applicant further argues:

"None of the cited references discloses an ultrasonic motor in which a piezoelectric element comes into contact with a movable member to drive the movable member as recited by independent claim 1. Nor do any of the cited reference disclosed or support member which fixedly supports a piezoelectric vibrator at a point correspond to a node of vibration thereof. "(Brief page 12).

However, as pointed out in the rejection claim 1 only calls for a piezoelectric vibrator" to contact the moveable element. It does not limit the claim to a piezoelectric element directly contacting the moveable member, as applicant's arguments would indicate.

Also as noted in the rejection, since the entire bottom of the stator of Katsuma is supported, any nodal line would be supported, thus meeting the claim language. The claim language does not stipulate that the vibrator is supported only at a nodal line. Likewise, the support elements #2e-27 and #46 of Miyazawa support a continuous ring or circle at the center of the stator. Figures 18a-d, 19a-c and 20a-c all show nodal lines exhaust at this location.

Applicant argues that dependent claim 2 recites that the support member has sufficient elastically urge the piezoelectric vibrator against a moving member in response to oscillating movement of the piezoelectric vibrator. As described above, the use of an elastic support member eliminates the need for the conventional use of an elastic member for urging the moving member in contact with the piezoelectric vibrator. There is no such disclosure or suggestion of this subject matter in the cited references or in claim 1".



However, as noted in the rejection, #4 of Katsuma is a resilient element that helps press the stator to the rotor during operation of the motor.

Applicant also argues that

Dependent claim 7 recites that the support member is provided with at least a part of a drive circuit for producing the drive signal. There is no disclosure or suggestion of this subject matter in the cited reference or in claim 1”.

As explained in the rejection, the conductive wires #46b in support #46a of Miyazawa (as well as the conductivity of support 2e-27) fairly constitute a part of a drive circuit. The same can be said for the conductors in anisotropic resilient support #4 of Katsuma.

In a final issue applicants state that

“In support of the obviousness rejection of claims 4 and 6, the Examiner stated that each of the cited references discloses the claimed for the support member comprising a separate element, which is not a patentable distinction.


The examiner's reliance upon a per se rule of unpatentability in making things separate or integral is not only incorrect, but is entirely inapplicable in this instance. First, there is no such per se rule. Second, even such a rule were in effect, claims 4 and 6 do not purport to recite making things separate or integral.

Neither of dependent claims 4 or 6 pertains to the support member being formed of a separate element. Dependent claim 4 recites that the support member comprises part of the substrate and dependent claim 6 recites that the piezoelectric vibrator is mounted on the support member”. (Brief page 16) while the rejection per se addresses

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the issue of making the substrate and support members integral rather than separate parts, applicant seems to be indicating this isn't the issue. Perhaps the examiner has misinterpreted the claim language which only states that the support member comprises part of the substrate. This could fairly be interpreted (in view of applicants comments) as only meaning they are joined together so as to be one unit or part. If this is the case, than both references explicitly show such structure. If not, the rejection addresses the obviousness of making the substrate and support member integral. For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

  
MARK O. BUDD  
PRIMARY EXAMINER  
APT UNIT 2834

Budd/ds

October 19/04

Conferees

D. Schuberg

B. Sircus

